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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

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TITLE

REPORT OF PINE BEETLE SURVEYS on the YAKIMA INDIAN RESERVATION, WASHINGTON Season of 1943

by

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July 7, 1944

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REPORT OF PINE BEETLE SURVEYS
on the
YAKIMA INDIAN RESERVATION, WASHINGTON
Season of 1943

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ABSTRACT OF RESULTS

1942 BARK BEETLE INFESTATION (Complete records)

Primary Insect: Western pine beetle in Ponderosa Pine

Estimated Gross Losses for 1942:

No. of trees	Volume	Average vol. per acre	Percent of stand
30,000	24,000,000 board feet	67 board feet	0.8

Trend: Only slightly higher than in 1941

Classification: Endemic to light epidemic

Recommendation: No direct control is necessary; the light selection cutting on the Dry Creek sale area will relieve the situation in one of the units showing heavy losses.

1943 BARK BEETLE LOSSES (Incomplete records)

Primary Insect: Same as in 1942

Probable Trend: Very noticeably lower than 1942

Recommendations: No direct control is necessary. As soon as possible, sanitation-salvage cuttings should be extended to other units of the reservation.

REPORT OF PINE BEETLE SURVEYS
on the
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Season of 1943

During the period from October 4 to 7 inclusive, a three-man crew composed of Messrs. Charles Chester and Stanley Johnson of the Indian Service and the writer conducted the 1943 survey of current ponderosa pine mortality on six 320-acre check plots on the Yakima Indian Reservation. As in the past, a one hundred percent cruise was made of all pine trees that had been killed by insects or wind-thrown since the previous survey.

A summary of the total losses for 1942 and the probable mortality for 1943 is presented in this short report. For a detailed account of past surveys on this reservation reference should be made to reports by Harold Weaver and the writer.

Losses in 1942

Pine beetle losses on the check plots (table 1) in 1942 were only slightly higher than those of 1941--the average increase being 4 percent for the six plots. Once more, the Logy Creek and the Smith Springs plots showed the heaviest losses (an average of 207 board feet per acre). The mortality on the other four plots was not serious.

An estimate of the gross insect-caused mortality for the reservation in 1942 (table 2) places the losses at 24 million board feet. This is equal to about 57 board feet per acre or 0.8 percent of the stand.

Probable 1943 Losses

The 1943 survey was made at a time when approximately 67 percent of the year's losses were evident. Based on this partial survey, the 1943 losses (table 1) have been estimated to be about half those of 1942. The trend of the infestation was definitely downward. The losses ranged from 0 on the Olney Coral plot to 82 board feet per acre on the Smith Springs plot. No control work is needed, since the proposed Dry Creek timber sale is designed to relieve the present situation on the units now showing the heaviest losses.

Because severe mortality from windthrow, following a storm in the spring of 1943, had been found in the adjoining pine stands of Klickitat County, it was expected that a similar condition existed on the reservation. However, a tally of the uprooted trees on the check plots showed that only one unit (Logy Creek) had suffered abnormal mortality. The records for the six plots are as follows:

Check Plot	Number of 1943 Windthrown Trees
Trout Creek	2
So. Cedar Valley	1
Castile Crossing	6
Logy Creek	19
Smith Springs and Olney Corral	0

It is felt that the total number of windthrown trees, even on the Logy Creek unit is not sufficient to be a contributing factor in increased pine beetle popluations during 1943 or 1944.

Recommendations

Because of the low level of the current infestation, no control work is needed. When the check plots are recruised in 1944, it would be well to check the effects of the 1943 windstorms on pine beetle populations both on and off the check plots. Whenever feasible, light selection or sanitation cuttings similar to that on the Dry Creek Sale should be extended to other units on the reservation.

Table 1: Results of the 1942 survey on the Yakima Indian Reservation-- Ponderosa pine timber killed by insects on 320 acre check plots

Check Plot Name and Location	No.	Timbered Acres	1942 Losses: No. Trees	1942 Losses: Gross Volume (Bd.Ft.): Total	1942 Losses: Gross Volume (Bd.Ft.): Per Acre	1942 Losses: Gross Volume (Bd.Ft.): Ratio to 1941	1943 Losses: Marked in 1943: Date of 1943 Cruise	1943 Losses: Marked in 1943: No. of Trees	1943 Losses: Marked in 1943: Volume (Bd.Ft.)	1943 Losses: Estimated total losses: No. Trees	1943 Losses: Estimated total losses: Gross volume (Bd. Ft.): Total	1943 Losses: Estimated total losses: Gross volume (Bd. Ft.): Per Acre	1943 Losses: Estimated total losses: Ratio for 1942
Trout Creek T7N, R 13 E, Sec. 17 N/2	4	320	25	18,270	57	1.58	10/6	17	14,780	25	22,000	69	1.20
So. Cedar Valley T6N, R 12E, Sec. 9 w/2	6	320	24	11,210	35	.58	10/7	6	2,390	10	4,000	13	.36
Castile Crossing T9N, R 12E, Sec. 13 W/2	12	320	27	30,620	96	.97	10/5	13	14,670	19	22,000	69	.72
Logy Creek T7N, R 16E, Sec. 10 W /2	14	320	87	63,810	199	1.02	10/6	21	14,530	31	22,000	69	.35
Smith Spring T8N, R 15E, Sec. 2 E/2	15	280	55	60,470	215	1.20	10/4	16	15,370	24	23,000	82	.38
Olney Corral T10N, R 14E, Sec. 27 N/2	16	300	9	2,910	10	.58	10/5	0	0	--	--	--	--
Total 6 Plots		1850	227	197,290	101	1.04		73	61,740	109	93,000	50	.50

Table 2: Estimated gross insect - caused ponderosa pine mortality in 1942
Yakima Indian Reservation

Year	Ponderosa pine type		Trees		Volume (Bd. Ft.)		
	Acreage	Volume(Bd.Ft)	Total	per section	Total	Per Acre	Percent of Stand
1942	360,000	2,900,000,000	30,000	54	24,000,000	67	0.8